

chapter 1

CLEAN WATER

Thirty years after passage of the federal Clean Water Act in 1972, EPA continues to make progress toward safe and clean water. Here are just a few of the projects underway in the Pacific Southwest.

Partnerships

Whitman Renews EPA Commitment to Lake Tahoe

EPA Administrator Christie Whitman spoke at Lake Tahoe on August 21, 2001, with Nevada Senators Harry Reid and John Ensign, Governor Kenny Guinn, and federal, tribal, state and local officials to highlight efforts to protect the sensitive alpine lake.

“The federal government has played an important role in the Tahoe region for more than 100 years, and I can assure you that the Administration remains committed to restoring and protecting this precious natural treasure,” said Whitman, speaking at the annual Lake Tahoe Summit Conference. “We will continue to pursue the goals of the Lake Tahoe Restoration Act by providing the technical expertise, monitoring and research that are crucial to succeed.”

EPA has provided more than \$17 million from 1997 through 2001 to improve water quality in and around the lake, and has assigned a full-time staff person, Jane Freeman, to work with other officials on lake issues. In 2002, there will be \$19.7 million in new funding for federal agencies to continue these efforts, such as the restoration of wetlands that filter out pollution from runoff in the Upper Truckee River and

Meeks Creek watersheds. These issues are especially urgent because over the past 35 years, Lake Tahoe has lost about one-third of its exceptional clarity due to pollution, which stimulates algae growth.

This year, U.C. Davis is completing an EPA-funded water clarity forecasting model that will allow – for the first time – scientific predictions of the pollutant reductions needed to attain the desired water clarity in Lake Tahoe. This model will enable Tahoe Basin officials to decide which types of projects in which locations will yield the greatest gain in the lake's clarity.

The U.C. Davis effort has found that pollutants reach the lake from a variety of sources, and that over half the nitrogen pollutant loading to the lake is from air pollution. Research is now underway to predict runoff and soil erosion within specific Tahoe Basin watersheds, to guide development of strategies for the entire Tahoe Basin.

Tahoe's Environmental Improvement Program, a local/state/federal partnership, leverages three dollars for every federal dollar spent. In addition to addressing lake clarity, the program focuses on health of the basin's forests, and air quality and transportation issues.

Monitoring Finds Southern California Beaches Cleaner

Ongoing analysis of bacteria levels at 365 monitoring stations along Southern California beaches in 2001 showed progress toward cleaner beaches, particularly in Los Angeles County, where 82% of the beaches received very good to excellent ratings, compared with 68% in 2000. Overall, 84% of Southern California beaches received these ratings from the environmental group Heal The Bay, which uses weekly data provided by county health agencies.

From 1999 to 2000, California beach advisories and closings due to pollution increased by 63%, but much of this increase was attributed to the start of monitoring at beaches that had never been monitored earlier. Chronically-polluted beaches were identified, giving beachgoers a chance to avoid them. Sewage spills and urban storm drains are the leading causes of contaminated beach waters. Summer flows in storm drains are often contaminated with lawn fertilizer, pet feces, motor oil, and other contaminants swept off lawns and streets into waterways.

Opposite: Waterway surrounding Brown's Island in the Sacramento/San Joaquin Delta. Photo by Phillip Ramsey.

Below: Christie Whitman and Washoe tribe members at Lake Tahoe, August 2001. Photo by Leo Kay.



EPA has been working for several years with the State of California, environmental groups, and local governments to increase beach monitoring, prevent sewer overflows, and divert summer storm drain flows to sewage treatment plants (see Enforcement, page 5).

Last year, with EPA funding, the Surfrider Foundation, San Diego County Department of Environmental Health, Southern California

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Coastal Water Research Project, and Earth's 911 established free public access to real-time information on beach water quality. Using both an Internet site, www.earth911.org, and a bilingual, toll-free phone system (1-800-CLEANUP), beach-goers can use their zip code to access beach status information. On the Internet, the Earth's 911 Web site offers point-and-click maps that provide the most current beach advisory information, along with related environmental information. Other coastal states, including Georgia and New Jersey, have also begun using the Earth's 911 system.

San Francisco Bay/Delta Restoration Efforts Continue

From the 1960s through the 1990s, the spring salmon spawning run on Northern California's Butte Creek averaged about 1,000 fish, and in some years, it dipped as low as 10. Since 1999, however, the spring spawning run has increased to an average of about 6,000. This dramatic rebound is a success for the CALFED Bay-Delta Program, a collaborative water planning effort by EPA, federal and state agencies and other stakeholders.

The CALFED Bay-Delta Program, possibly the world's largest ecosystem restoration effort, has over a hundred projects like the Butte Creek salmon restoration already in progress, and many more planned.

The salmon recovery project on Butte Creek is an example of the cooperation CALFED brings to government agencies and



disparate urban, agricultural, and environmental interests. The 1998–1999 removal of four small dams that had hindered salmon passage on Butte Creek was funded by the local Western Canal Water District and Southern California's Metropolitan Water District. Funding for the hundreds of CALFED projects comes from water users, a \$1.97 billion bond measure passed by California voters in 2000, and federal funds.

For an update on the latest CALFED projects, check the CALFED Web site, at <http://calfed.water.ca.gov>.

New Monitoring of Bay Area Wetlands

Further downstream in the Bay-Delta watershed, EPA's Paul Jones is leading a team of scientists from state and federal agencies who are creating a Wetlands Regional Monitoring Program (RMP) for the San Francisco Bay Area. Every year, millions of dollars of public funds and thousands of hours in agency staff time are spent on protecting and restoring wetlands around the bay. The monitoring program will ensure that the funds are well-spent, by assessing the ecological health and trends of the wetlands, and measuring and comparing the progress of restoration projects.

The wetlands monitoring program, funded by EPA and the California Coastal Conservancy (a state agency), builds upon existing monitoring for toxic substances, underway for the past five years, by the non-profit San Francisco Estuary Institute (on the Web at www.sfei.org). Participants include other public agencies, colleges and universities, volunteers, and environmental groups who collect and analyze the data, and publish the findings.

Above: Restored tidal lagoon at Crissy Field, San Francisco, is one of over 100 habitat restoration projects completed or under way in the San Francisco Bay/Delta watershed.
Below: Boogie boarding at Santa Monica Beach, Calif.
Photos by David D. Schmidt.



Good News for Delta: San Joaquin Farms Cut Selenium Drainage 25%

In the early 1990s, EPA helped negotiate a solution to the problem of selenium contamination in San Joaquin Valley and Delta waterways — the Grasslands Bypass Project Use Agreement, which took effect in 1995. Selenium is a toxic, naturally occurring mineral in soils of the western San Joaquin Valley. By 2001, selenium loads in downstream waterways had been reduced by at least 25%, or 1,300 pounds/year. This was a significant improvement from the 1980s, when selenium in agricultural drainage water was the cause of deformed duck embryos and hatching failures at the Kesterson National Wildlife Refuge.

The agreement is a contract between the U.S. Bureau of Reclamation, which owns the San Luis Drain, and farmers in the Grasslands drainage area (west side of San Joaquin Valley) that allows farmers to discharge water into the drain as long as they are continually decreasing the selenium in it. Agencies, farmers, and environmental groups are unanimous in praising the success of the project. Selenium reductions resulted from water conservation (drip irrigation of perennial fields), on-farm management of drainage water, changing crops, use of salt-tolerant crops, and economic incentives (such as load trading within districts, and tiered water pricing).

Southern California Wetland Recovery Program

Southern California's coastal urban and industrial development have left very little wetland acreage in the region. To help protect and restore the remaining wetlands, EPA is participating in the Southern California Wetland Recovery Program (SCWRP). This five-county effort, in partnership with federal, state, and local agencies and other groups, has spent \$30 million – \$26 million in state funds; \$3 million in federal funds; \$1 million from other sources – on acquiring (990 acres), restoring (825 acres), and mapping (150 square miles) coastal wetlands. A penalty for illegal placement of dredged material has added to the funding (See Enforcement, page 7).

Dairies: Preventing Water Pollution

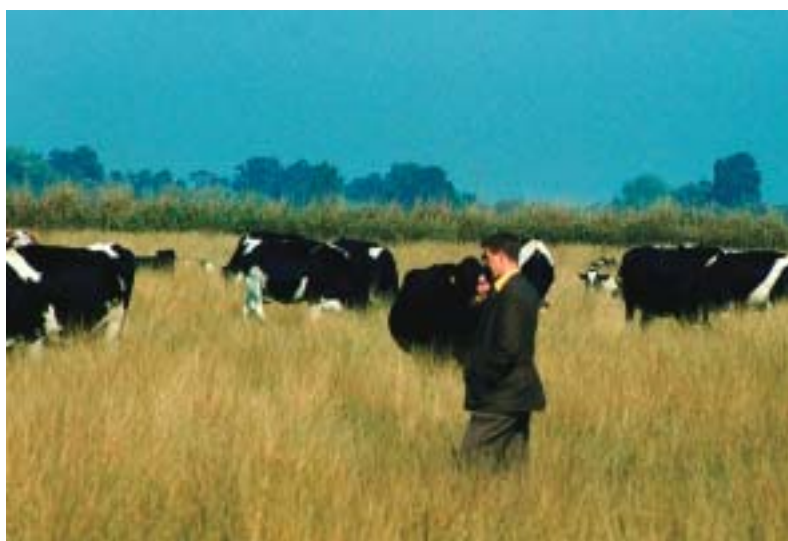
Preventing water pollution from concentrated animal feeding operations, especially dairies, continues to be a major priority. Downstream

waterways can be polluted by rainy-season runoff sweeping manure into the nearest ditch or stream. To prevent this pollution, EPA is working with California dairy operators, U.C. Davis, and others in the voluntary California Dairy Quality Assurance Partnership.

EPA also issued a discharge permit for Arizona dairies, requiring each facility to prepare a manure management plan to protect water quality. Arizona has over 200 dairies, with 140,000 dairy cows. Each cow produces about 120 pounds of wet manure per day.

The permit was written by EPA with assistance from the Arizona Department of Environmental Quality (ADEQ), the state's Cooperative Extension, the federal Natural Resources Conservation Service (NRCS), and

*Dairy in Chowchilla, Calif.
Photo by Jamie Liebman.*



dairy industry groups. EPA also worked with the state's Agriculture Department (ADA) to develop a producers notebook to explain the new requirement to dairy operators. EPA, NRCS, ADEQ, and ADA conducted four informational workshops to provide guidance for producers to comply with the permit.

For more information on preventing pollution from animal waste, go to www.epa.gov/region09/animalwaste.



Infrastructure

U.S. – Mexico Border Clean Water Projects

On December 7, 2001, EPA Regional Administrator Wayne Nastri joined San Diego Mayor Dick Murphy at the dedication of the newly completed South Bay Water Reclamation Plant, near the U.S.–Mexico Border. The secondary treatment facility recycles water, converting up to 15 million gallons of sewage daily into water clean enough for irrigation and industry. EPA contributed \$27.3 million in federal funding for the \$110 million project.

Nastri praised the city for completing its reclaimed water system in advance of a deadline set by federal law. With another reclaimed water facility already operational, San Diego can

produce 45 million gallons of reclaimed water per day, which help meet the area's needs without importing more costly drinking water.

EPA works with the International Boundary and Water Commission (IBWC), the Border Environment Cooperation Commission (BECC), the North American Development Bank (NADBank), and local governments to build drinking water and wastewater treatment facilities for communities up to 100 km (62 miles) north and south of the Border. This combined effort has 38 projects underway, benefitting six million people. Congress has appropriated \$50–\$100 million each year since 1995 for this program. EPA manages these funds via grants to the BECC and NADBank.

EPA has also begun long range binational planning to identify future needs. EPA's planning effort for Tijuana will identify the fast-growing city's future needs for water and wastewater infrastructure. EPA awarded the city a \$2 million grant via NADBank to fund this effort. Scheduled for completion by the end of 2002, this planning process may become a model of how Border infrastructure is planned, designed, and constructed in the future.

For information on other clean water projects in the Border area, go to www.epa.gov/region09/border.

Above: San Diego's new South Bay Water Reclamation Plant converts 15 million gallons of sewage daily into reclaimed water clean enough for industrial and irrigation uses. EPA Photo.

Below: Vernal pool wetlands in California's Central Valley in winter (left) and spring (right). These seasonal wetlands provide habitat for rare and endangered species of fairy shrimp and native wildflowers. Photos by Tim Vendlinski.



EPA Funds Drinking Water Projects for Tribes

Last year, EPA's Pacific Southwest Region awarded \$10.8 million for 12 projects to supply drinking water to six Indian tribes. This year, EPA plans to fund 36 new drinking water projects for Indian tribes, worth approximately \$5 million. The increased number of projects results from an EPA-funded assessment of infrastructure needs for the Navajo Nation, which confirmed that 40% percent of Navajo homes still lack running water.

Enforcement

EPA Takes Action to Halt LA Sewage Spills

In January 2001, EPA and the Los Angeles Regional Water Quality Control Board (RWQCB) sued the City of Los Angeles in federal district court for over 2,000 sewage spills stemming from problems with the city's wastewater collection system over the past several years. EPA's action was joined with an existing suit filed by the environmental group Santa Monica BayKeeper to address the same issues. Local residents' groups, raising environmental justice concerns associated with the sewage spill issues, also subsequently joined the suit.

Los Angeles reported 2,065 spills between December 1995 and August 2000. Frequently raw sewage has ended up on city streets, in

storm drains and in the Pacific. The city has taken action in recent years to reduce its spills, but is still averaging over 50 spills per month.



Responsible Parties Spend \$90 Million on MTBE Cleanup

Spurred by a series of EPA enforcement actions against more than a dozen parties responsible for leaking gasoline underground storage tanks, the nation's largest cleanup of soil and water tainted by the gas additive MTBE is now well underway. The contamination forced Santa

Kathy Baylor collecting a water sample for lead and cadmium analysis, from a natural sinkhole near an industrial site on Oahu, Hawaii. Photo by Paul Kalaiwaa.





*Stream in Great Basin
National Park, Nevada.*

Photo by David D. Schmidt.

Monica to shut down wells that formerly provided 40% of the city's drinking water.

EPA, working in partnership with the Los Angeles Regional Water Quality Control Board, successfully compelled the parties to pay over \$5 million for replacement drinking water, treat over 100 million gallons of contaminated ground water, remove over 4,100 cubic yards of contaminated soil, remove over 17,000 lbs of hydrocarbons using soil vapor extraction, drill over 400 groundwater monitoring wells, collect over 4,000 ground water samples, collect over 10,000 soil samples, and conduct pilot treatment tests of eight different technologies. By late 2001, they had collectively spent about \$90 million on this effort.

For more information on this project and MTBE in general, go to www.epa.gov/region09/mtbe/charnock.

Dredging Penalty Helps Save Wetlands

Early last year, Orange County and its dredging contractor, Soli-Flo Partners LP, paid a \$735,000 penalty for ocean dumping violations during the Upper Newport Bay dredging project. A recurring contractor error caused 975 barge loads of dredged mud and sand to be illegally dumped outside the ocean site approved by EPA.

The county paid \$270,000 of the penalty to the California Coastal Conservancy to help purchase key coastal wetlands owned by Southern California Edison. Protecting the 17-acre Edison property, part of the Huntington Beach Wetlands, is a high priority for the Southern California Wetlands Recovery Project.

Routine dredging of shipping lanes is essential to the West Coast economy, with thousands of ships entering and leaving California ports each year. Harbors routinely fill with silt, and need to be deepened. EPA oversees the permits for disposal of dredged mud and sand to minimize harm to the environment. In the San Francisco Bay Area, EPA in the 1990s worked with the U.S. Army Corps of Engineers, the Bay Conservation and Development Commission, and the Regional Water Quality Control Board to adopt a "Long Term Management Strategy" for dredged material. The strategy, now in effect, emphasizes beneficial re-use of dredged material, as an environmentally preferable alternative to in-bay disposal.

EPA Science

Scientists Study Delta Cross Channel Impact on Fish

Scientists from eight state and federal agencies, including EPA fisheries biologist Bruce Herbold, are cooperating in a three-year study of how the opening and closing of a movable dam in the northern Sacramento-San Joaquin Delta affects migrating salmon, and water quality in the South Delta, where water is pumped into canals and sent to farms and cities farther south.

The dam controls water flows from the Sacramento River into the man-made Delta Cross Channel, which was built in 1953 to

EPA People

Amy Wagner and EPA's Regional Lab

Amy Wagner is a marine biology expert with EPA's Regional Laboratory in Richmond, Calif. She has been with EPA for 11 years, and is responsible for conducting marine toxicity tests, providing technical assistance, and coordinating field sampling.

For three years, Amy has also been the Volunteer Monitoring Coordinator for EPA's Pacific Southwest Region, assisting citizen water monitoring groups in California, Arizona, Nevada, Hawaii, and Pacific Island territories as far away as Guam. She has established an equipment loan program and provides technical training for volunteers. Amy recently made a presentation on microbiological analyses and data communication at the EPA-sponsored Volunteer Estuary Monitoring Conference in Tijuana, Mexico.

The Regional Lab conducts microbiological and pesticide testing of water samples from citizen monitoring groups. Over the past three years, the lab has analyzed over 700 samples from East Bay creeks and Oakland's Lake Merritt. Results have shown that bacteria levels typically increase as water flows downstream through urban areas, and sewage leaks or spills are readily identified in the samples. Last year, the lab analyzed samples for the common household pesticide diazinon, in addition to bacteria. The pesticide failed to show up in samples from all 25 East Bay locations tested – a good sign for the health of the creeks.

Amy has a B.A. in Aquatic Biology from the University of California at Santa Barbara and a Masters Degree in Marine Biology from Moss Landing Marine Laboratories on Monterey Bay. To learn more about volunteer water monitoring projects, call Amy Wagner at 510-412-2329.



send clean, relatively salt-free Sacramento River water into the South Delta. If the dam's movable gates are closed during a dry fall season, water in the South Delta gets saltier, but salmon get a quicker, safer passage to and from the ocean – or so fish experts had assumed until 1999.

Under the auspices of CALFED (the state and federal agencies working to improve water quality in the Delta), the agencies' scientists tracked fish four ways: by dyeing 120,000 small hatchery salmon bright colors, putting them in the water upstream of the Cross Channel, and then trawling for them downstream; putting

traps in the river to trap migrating adult fish; putting tiny radio transmitters on young downstream migrants; and putting sonar-like devices in the water to count large fish as they swim by.

Results of the first fall-season (2000) data showed that the relationship between the dam's gates closing and salmon survival is more complex than previously assumed. Further research will focus on how different schedules for opening and closing the gates can ease salmon migration.

EPA biologist Amy Wagner taking a sediment sample from a streambed. Photo by Kathy Baylor.